METHYL IODIDE A DIRECT REPLACEMENT OF METHYL BROMIDE AS A SOIL FUMIGANT FOR SWEET PEPPERS

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The purpose of this field study was to evaluate if methyl iodide, when applied under plastic mulch, would reduce or eliminate the effects of soil-borne *Phytopahthora capsisi,* root-knot *(Meloidogyne incognita)* and control yellow nut sedge (Cyperus esculentus) control for another crop season.

The field trial was conducted in Rockdale sandy loam-limestone on November 17, 1996. Prior to fumigation, soil beds were formed 48 inches wide and 6 inches high on 6 ft centers. Each treatment plot was 25 feet long, replicated five times, and planted with 'Boynton Bell' transplants. Fertilizer of the analysis 14-16-16 at 1500 lbs/A was banded on the bed and rototilled into the bed.

Five soil fumigants, methyl-bromide, MC33 (67% methyl bromide + 33% chloropicrin), chloropicrin, and methyl iodide and methyl iodide + chloropicrin were evaluated for disease, nematode, and weed control and on April 15, 1997. Fruit harvest commenced on March 10, 1997 and terminated on April 15, 1997. Methyl bromide and MC33 were injected into soil beds at 250 lbs/A and methyl iodide was applied at 375 lbs/A. The intention was to inject methyl iodide on an equal molar rate with methyl bromide. Chloropicrin was injected at 75 lbs/A. All of the fumigants were injected at 71% of commercial fumigation rates. The fumigants were injected through three shanks, spaced 9 inches apart, at a depth of 4 inches.

Immediately following injection of the fumigants, 1.5 mil polyethylene film was placed over the beds. After 7 days the plastic was perforated to allow venting and 12 days later plant house commercially raised tomato cultivar 'Sunny' transplants were planted at a spacing of 12 inches in the row.

All of the fruits were harvested from 25 plants from each replicate on April 15, 1996. Following the fruit harvest the plants were puffed for root evaluation. Methyl-bromide, MC33, methyl-iodide + chloropicrin, and methyl iodide provided statistically significant control of root rot, root knot nematode and nut sedge. Methyl-bromide and methyl-iodide + chloropicrin provided significantly more fruit than the other treatments including the control.

There was no apparent phytotoxicity in any of the treatments.